

**WHAT IS CLAIMED IS:**

1. A method for reducing the thickness of an arterial wall comprising the step of ablating the exterior of the arterial wall.

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2. A method as claimed in claim 1, further comprising the step of surveying the thickness of the arterial wall prior to the step of ablating.

3. A method as claimed in claim 1, further comprising the step of surveying the 10 thickness of the arterial wall during the step of ablating.

4. A method as claimed in claim 1, wherein the step of ablating is carried out mechanically.

15 5. A method as claimed in claim 1, wherein the step of ablating is carried out using a laser.

6. A method as claimed in claim 5, wherein the laser is a femto-second pulsed laser, and the step of ablating comprises pulsing the laser, wherein the pulses are of 20 to 100 fs duration.

20 7. Apparatus for relieving arterial blockage comprising:

- i) surveying apparatus for surveying the thickness of an arterial wall, and
- ii) external ablating apparatus for ablating the exterior of the arterial wall

25 to increase the flexibility of the arterial wall.

8. Apparatus as claimed in claim 7, further comprising:

30 iii) ablating controller for controlling the external ablation of the arterial wall by the external ablating apparatus responsive to a signal from the surveying apparatus, the signal relating to the arterial wall thickness.

9. Apparatus as claimed in claim 7, wherein the surveying apparatus produces a 3D image of the arterial wall.

10. Apparatus as claimed in claim 9, wherein the surveying apparatus is selected from the group consisting of: mechanical imaging, ultrasound, magnetic resonance imaging, computed tomographic imaging using electromagnetic radiation and photonic imaging.

11. Apparatus as claimed in claim 7, wherein the ablating apparatus comprises a laser.

12. Apparatus as claimed in claim 11, wherein the laser is a femto-second pulsed laser.

13. Apparatus as claimed in claim 12, wherein the pulses are of 20 to 100 fs duration.

14. Apparatus as claimed in claim 12, wherein the laser radiation is of 3-5 J/cm<sup>2</sup> fluence.

15. Apparatus as claimed in claim 11, wherein the laser spot diameter is 10 to 100 µm.

16. Apparatus as claimed in claim 9, wherein the ablating controller controls ablation to provide a uniform residual arterial wall.

17. Apparatus as claimed in claim 9, wherein the ablating controller controls ablation to provide a plurality of blind holes in the exterior of the artery wall.

18. Apparatus as claimed in claim 9, wherein the ablating controller controls ablation to provide a plurality of furrows in the exterior of the arterial wall.